(72) Inventors; and
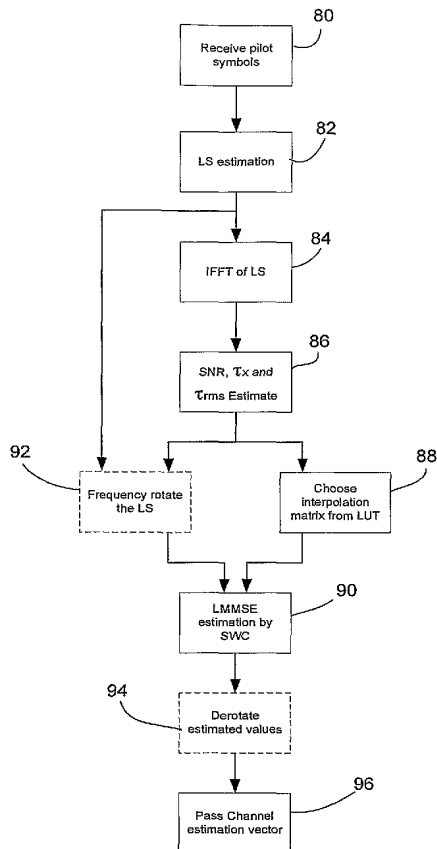(75) Inventors/Applicants (for US only): FAULKNER, Michael [AU/AU]; 7 Athol Street, Moonee Ponds, VIC 3039 (AU). TOLOCHKO, Igor [AU/AU]; 21/28-32 Sturdee Parade, Dee Why, NSW 2099 (AU).

(54) Title: CHANNEL ESTIMATION FOR OFDM SYSTEMS

(57) Abstract: A method for performing channel estimation in an orthogonal frequency-division multiplexing system, the method including the steps of: receiving (80) transmitting pilot symbols from a plurality of transmit antennas; forming (82) a least-squares estimation matrix from the transmitted pilot symbols; forming (84-88) a sparse smoothing matrix approximating a fixed weighting matrix, wherein each row vector in the sparse smoothing matrix contains one or more of the strongest weights in each row of the fixed weighting matrix; and (90) deriving a channel estimation matrix from the sparse smoothing matrix and the least-squares estimation matrix.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

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